

**SUMMARY OF PROPOSED CHANGES, 2008**  
**Rule 9B-13**  
**Chapter 13 of the *Florida Building Code, Building***  
**and to**  
**Chapter 11 of the *Florida Building Code, Residential***

**CHAPTER 13 of the FBC-Building**

**Subchapter 1**

- Made editorial corrections to Sections 13-101.4.2.1, 13-102.1, 13-104.4.5 and Figure 13-1 to be consistent with the 2007 code revisions.
- Revise Section 13-101.6 to clarify that replacement of either the outdoor unit or indoor unit in a split air conditioning system constitutes a replacement of that system, not a repair to codify DCA07-DEC-172.

**Subchapter 2. Based on changes in ASHRAE 90.1-2007:**

- Add definitions for ASTRONOMICAL TIME SWITCH, DEMAND CONTROL VENTILATION, EFFICACY (OF A LAMP), EYE ADAPTATION, FAN BRAKE HORSEPOWER, FAN SYSTEM BHP, FAN SYSTEM DESIGN CONDITIONS, HIGH FREQUENCY ELECTRONIC BALLAST, MULTI-SCENE CONTROL, NAMEPLATE HORSEPOWER, PHOTOSENSOR, SINGLE PACKAGE VERTICAL AIR CONDITIONER and SINGLE PACKAGE VERTICAL HEAT PUMP
- Delete definitions for ADJUSTED LIGHTING POWER, AIR POROSITY, APPLICATION PART-LOAD VALUE, ELECTRIC METER, ELECTRIC SUPPLIER and FLOODLIGHTING
- Change the definitions for FAN SYSTEM MOTOR NAMEPLATE HP, ORIENTATION and TASK LIGHTING.

**Subchapter 3**

- Fix the title of ARI Standard 390-2003, Performance Rating of Single Packaged Vertical Air Conditioners and Heat Pumps.
- Add the following standards due to updating to ASHRAE 90.1-2007:
  - ASTM E 1980 (2001), Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low Sloped Opaque Surfaces.
  - DOE, 10 CFR, Part 431, Subpart E, Uniform test method for the measurement of energy efficiency of commercial packaged boilers.
- Delete the following standards due to updating to ASHRAE 90.1-2007:
  - ASTM E 283-04, Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
  - H.I., HBS 86-1989, Testing and Rating Standard for Heating Boilers.
- Update the year of the following standards due to updating to ASHRAE 90.1-2007.
  - CTI ATC-105-(00). Acceptance Test Code for Water Cooling Towers

- CTI Std. 201-(04), Certification Standard for Water Cooling Tower Thermal Performance.
- Add the following referenced documents:
  - ASHRAE, 2004      Advanced Energy Design Guide for Small Office Buildings      Appendix 13-B, B5.0
  - ASHRAE, 2006      Advanced Energy Design Guide for Small Retail Buildings      Appendix 13-B, B5.0
  - ASHRAE, 2008      Advanced Energy Design Guide for K-12 School Buildings      Appendix 13-B, B5.0
- Amend the EnergyGauge Summit Fla/Com computer program to include applicable Addenda to ASHRAE 90.1-2004, thereby updating it to ASHRAE 90.1-2007.
- Amend the EnergyGauge Summit Fla/Com computer program to make separate baseline criteria for small offices (less than 20,000 ft<sup>2</sup>), small retail (less than 20,000 ft<sup>2</sup>), K-12 school buildings, and all other buildings and made minimum code compliance for commercial buildings at least 15% more stringent by adopting criteria from the following documents:
  - ASHRAE Advanced Energy Design Guide for Small Office Buildings,
  - ASHRAE Advanced Energy Design Guide for Small Retail Buildings,
  - ASHRAE Advanced Energy Design Guide for K-12 School Buildings
  - ASHRAE Standard 90.1-2007.
- Amend the EnergyGauge USA Fla/Res computer program to make residential code compliance at least 15% more stringent by changing the following baseline features:
  - Baseline window area changed to 15% of conditioned floor area;
  - Baseline window characteristics changed to U=0.40, SHGC=0.30
  - Baseline distribution system efficiency changed to DSE=0.88

#### **Subchapter 4**

- Reference Appendix 13-B from the following sections to rectify inadvertent 2007 code omission: 13-401.ABC, 13-402.ABC, 13-403.ABC.2, 13-404.ABC.4, and 13-405.ABC.
- Update Subchapter 13-4 to include the following criteria from ASHRAE 90.1-2007:
  - Revise the fenestration criteria for permanent projections and solar heat gain coefficients in Sections 13-401.C.2 and 13-401.C.3 per addenda n and av to ASHRAE 90.1-2004. Limit the percent glazing in Method C to 40 percent.
  - Revise the roof insulation criteria for Method C in Section 13-404.C.1 to allow an exception for high albedo roofs and a minimum Solar Reflective Index of 82 per Addenda y and aj to ASHRAE 90.1-2004.
  - Remove exceptions for computer rooms and data processing from the dehumidification criteria in Section 13-407.ABC.2.4 per Addenda h to ASHRAE 90.1-2004.
  - Revise Section 13-407.ABC.3.5.1, Off-hour controls, to delete the exception for HVAC systems serving hotel/motel guest rooms per Addenda q to ASHRAE 90.1-2004.
  - Revise the minimum efficiencies for air conditioners and heat pumps greater than 65,000 Btu/h in Tables 13-407.ABC.3.2.1A and B per Addenda g to ASHRAE 90.1-2004.

- Revise the minimum efficiencies for single package vertical air conditioners and single package vertical heat pumps in Table 13-407.ABC.3.2.1D per Addenda b to ASHRAE 90.1-2004.
- Revise Table 13-407.ABC.3.2.1G to add CTI Std 201 to the test procedures for heat rejection equipment per Addenda ak to ASHRAE 90.1-2004.
- Revise Table 13-408.ABC.3.2.1E to add a footnote requiring interrupted or intermittent ignition devices and have either power venting or an automatic flue damper on gas- and oil-fired warm air unit heaters per Addenda ao to ASHRAE 90.1-2004..
- Revise the minimum efficiencies for gas- and oil-fired boilers in Table 13-408.ABC.3.2.1F per Addenda t and an to ASHRAE 90.1-2004.
- Revise Section 13-409.ABC.3.4, Ventilation controls for high-occupancy areas, to reflect changes to ASHRAE Standard 62.1 and require Demand Control Ventilation for spaces larger than 500 ft<sup>2</sup> with a design occupancy greater than 40 people per 1000 ft<sup>2</sup> of floor area (with exceptions) per Addenda s and v to ASHRAE 90.1-2004.
- Add Section 13-409.ABC.2.1, Balanced return air, for consistency with the *FBC-Mechanical* code.
- Revise Section 13-410.ABC.1.1.1, Fan system power limitation, in its entirety to expand application coverage for complex systems and increase stringency for simple systems and revise Section 13-410.ABC.1.1.2.1 to lower the threshold for motors with a part-load fan power limitation to 10 hp and larger per Addenda ac and ar to ASHRAE 90.1-2004.
- Add luminaire wattage criteria reference from Section 13-415.ABC.5.2 to Appendix 13-B per Addenda e to ASHRAE 90.1-2004 and revised Section B4.1.2 of Appendix 13-B to be the maximum labeled wattage of the luminaire per addenda i of ASHRAE 90.1-2004.
- Revise Section 13-415.ABC.1.4 to allow a combination of a photosensor and a time switch per Addenda j to ASHRAE 90.1-2004.
- Revise interior lighting power calculation criteria for retail spaces in Section 13-415.B.2 and Section B4.1.2 of Appendix 13-B per Addenda ai to ASHRAE 90.1-04.
- Revise the installed interior lighting power criteria in Section 13-415 and add definitions per Addenda aa to ASHRAE 90.1-2004.
- Slightly revise lighting power densities for retail sales areas in Table 13-415.B.1 per Addenda ap to ASHRAE 90.1-2004.

### **Subchapter 13-6**

- Revise Section 13-600.1 to change the term residential “buildings” to “dwelling units” to clarify that Subchapter 13-6 is performed on a single dwelling unit, not an entire building.
- Revise Sections 13-600.1.2 and 13-601.B.1 to limit the amount of windows in dwelling units complying by Method B to 14 percent glass-to-floor area as part of the response to Executive Order 127 requiring the energy code to be 15% more stringent than the 2007 code by January, 2009.

- Revise Section 13-601.B.2 to require all glass in homes complying by Method B to have a maximum U-factor of 0.40 and a SHGC no higher than 0.30 as part of the response to Executive Order 127 requiring the energy code to be 15% more stringent than the 2007 code by January, 2009.
- Add Section 13-604.A.5 to reference Section R806.4 for criteria to use the unvented attic option in EnergyGauge USA Fla/Res.
- Revise the minimum efficiencies for air conditioners and heat pumps greater than 65,000 Btu/h in Tables 13-607.ABC.3.2A and B per Addenda g to ASHRAE 90.1-2004 for consistency with Subchapter 13-4 of the *Florida Building Code, Building*.
- Revise the minimum efficiencies for single package vertical air conditioners and single package vertical heat pumps in Table 13-607.ABC.3.2D per Addenda b to ASHRAE 90.1-2004 for consistency with Subchapter 13-4 of the *Florida Building Code, Building*.
- Revise Table 13-608.ABC.3.2E to add a footnote requiring interrupted or intermittent ignition devices and have either power venting or an automatic flue damper on gas- and oil-fired warm air unit heaters per Addenda ao to ASHRAE 90.1-2004 for consistency with Subchapter 13-4 of the *Florida Building Code, Building*.
- Revise the minimum efficiencies for gas- and oil-fired boilers in Table 13-608.ABC.3.2F per Addenda t and an to ASHRAE 90.1-2004 for consistency with Subchapter 13-4 of the *Florida Building Code, Building*.
- Add Section 13-607.A.3, Existing equipment, to reference to Table C4.1.1 in Appendix 13-C for minimum efficiencies for existing equipment.
- Add Sections 13-607.A.4, and 13-608.A.3, Multiple systems, to replace the reference to the equation in Appendix 13-C for computing a single efficiency for multiple systems that was inadvertently omitted from the 2007 code.
- Add Sections 13-607.A.5 and 13-607.A.6 to reference Appendix 13-C for criteria to use the cross ventilation and whole house fan options in EnergyGauge USA Fla/Res.
- Add Section 13-609.ABC.2, Balanced return air, for consistency with the *FBC-Mechanical* code.
- Revise Section 13-610.B.1, Ducts installed, to require ducts and air handling units in homes complying by Method B to either be installed inside conditioned space or be tested to the criteria for the tested duct option in Section 13-610.A.2 as part of the response to Executive Order 127 requiring the energy code to be 15% more stringent than the 2007 code by January, 2009.
- Revise Table 13-613.A.1-1 baseline features as part of the response to Executive Order 127 requiring the energy code to be 15% more stringent than the 2007 code by January, 2009, in the following categories:
  - Glazing Baseline area is changed from 18% to 15% of conditioned floor area.
  - Glazing Baseline U-factor is changed from U-0.75 to U-0.40.
  - Glazing Baseline SHGC is changed from 0.40 to 0.30.
  - Thermal distribution system Baseline DSE is changed from 0.80 to 0.88.

### **Appendix 13-B**

- Revise Table B-20 in Appendix 13-B to add U-factors for screw-down roofs with R-19 insulation and to require a 1" thermal spacer block between the purlins and metal roof panels per Addenda k and al to ASHRAE 90.1-2004.
- Add Section B5.0 to Appendix 13-B to show baseline components for compliance Methods A and B and minimum component features for Method C contained in the EnergyGauge Summit Fla/Com computer program.

### **Appendix 13-C**

- Revise Section 13-4.1.2 to add the equation for an effective efficiency rating for multiple heating or cooling systems.
- Add Section 13-C4.1.3 to add criteria taken from the 2004 code for using the cross ventilation option in the EnergyGauge USA Fla/Res computer program.
- Add Section 13-C4.1.4 to add criteria taken from the 2004 code for using the whole house fan option in the EnergyGauge USA Fla/Res computer program.

### **Appendix 13-D**

- Combine Form 400C for ASHRAE Climate Zones 1 and 2 into one form and revise the requirements on Form 400C to reflect a worst case condition based on criteria from the following documents to meet the Governor's Executive Order 127 to tighten the code by 15 percent:
  - Addenda as and Addenda at to ASHRAE 90.1-2004,
  - ASHRAE Advanced Energy Design Guide for Small Office Buildings,
  - ASHRAE Advanced Energy Design Guide for Small Retail Buildings,
  - ASHRAE Advanced Energy Design Guide for K-12 School Buildings.
- Revise Form 600A for all climate zones to incorporate a multiplier of 0.85 against the total Baseline column to make the code 15% more stringent for residential buildings complying by this method.
- Revise the Method A Baselines to make Form 1100A 15% more stringent than the 2007 code as follows: Glazing U-0.40, SHGC 0.30, Window to Wall Ratio 15% and duct distribution efficiency 0.88 (airtight ducts).
- Revise Form 1100B to a single form with R-6 interior block wall insulation, U-0.40, SHGC 0.3 windows at no more than 14 % glass to floor area, and either all ducts and air handler in conditioned space or ducts tested to the airtight duct option of Method A.

**Chapter 11,**  
**Florida Building Code, Residential**

- Revise Section N1100.0 to change the term residential “buildings” to “dwelling units” to clarify that residential energy code compliance by this chapter is performed on a single dwelling unit, not an entire building.
- Add Sections N1100.0.3 – N1100.8 to bring forward scoping criteria from the 2004 code for residential additions, renovations, manufactured homes, buildings permitted together, changes of occupancy type and existing buildings that were inadvertently not moved into the *FBC-Residential* in the 2007 code update process.
- Revise Section N1100.1.2 to limit the amount of windows in dwelling units complying by Method B to 14 percent glass-to-floor area as part of the response to Executive Order 127 requiring the energy code to be 15% more stringent than the 2007 code by January, 2009.
- Revise Section N1101.B.2 to require all glass in homes complying by Method B to have a maximum U-factor of 0.40 and a SHGC no higher than 0.30 as part of the response to Executive Order 127 requiring the energy code to be 15% more stringent than the 2007 code by January, 2009.
- Add Section N1104.A.5 to reference Section R806.4 for criteria to use the unvented attic option in EnergyGauge USA Fla/Res.
- Revise the minimum efficiencies for air conditioners and heat pumps greater than 65,000 Btu/h in Tables N1107.ABC.3.2A and B per Addenda g to ASHRAE 90.1-2004 for consistency with Subchapter 13-4 of the *Florida Building Code, Building*.
- Revise the minimum efficiencies for single package vertical air conditioners and single package vertical heat pumps in Table N1107.ABC.3.2D per Addenda b to ASHRAE 90.1-2004 for consistency with Subchapter 13-4 of the *Florida Building Code, Building*.
- Revise Table N1108.ABC.3.2E to add a footnote requiring interrupted or intermittent ignition devices and have either power venting or an automatic flue damper on gas- and oil-fired warm air unit heaters per Addenda ao to ASHRAE 90.1-2004 for consistency with Subchapter 13-4 of the *Florida Building Code, Building*.
- Revise the minimum efficiencies for gas- and oil-fired boilers in Table N1108.ABC.3.2F per Addenda t and an to ASHRAE 90.1-2004 for consistency with Subchapter 13-4 of the *Florida Building Code, Building*.
- Add Section N1107.A.3, Existing equipment, to reference to Table B4.1.1 in Appendix G-B for minimum efficiencies for existing equipment.
- Add Sections N1107.A.4, and N1108.A.3, Multiple systems, to replace the reference to the equation in Appendix G-B for computing a single efficiency for multiple systems that was inadvertently omitted from the 2007 code.
- Add Sections N1107.A.5 and N1107.A.6 to reference Appendix G-B for criteria to use the cross ventilation and whole house fan options in EnergyGauge USA Fla/Res.

- Add Section N1109.ABC.2, Balanced return air, for consistency with the *FBC-Mechanical* code.
- Revise Section N1110.B.1, Ducts installed, to require ducts and air handling units in homes complying by Method B to either be installed inside conditioned space or be tested to the criteria for the tested duct option in Section N1110.A.2 as part of the response to Executive Order 127 requiring the energy code to be 15% more stringent than the 2007 code by January, 2009.
- Revise Table N1113.A.1-1 baseline features as part of the response to Executive Order 127 requiring the energy code to be 15% more stringent than the 2007 code by January, 2009, in the following categories:
  - Glazing Baseline area is changed from 18% to 15% of conditioned floor area.
  - Glazing Baseline U-factor is changed from U-0.75 to U-0.40.
  - Glazing Baseline SHGC is changed from 0.40 to 0.30.
  - Thermal distribution system Baseline DSE is changed from 0.80 to 0.88.

### **Appendix G**

- Revise Appendix G-B to add criteria for options inadvertently omitted from the 2007 code as shown in Appendix 13-C above.
- Revise residential Forms 600A, 1100A, and 1100B to make them roughly 15% more stringent as described in Appendix 13-D above.